From July 27 to August 10.

Object.	Mag.	R.A. h m s	δ ° ′
Lacaille 8463	6·2	20 23 11	−22 45·1
„ 8506	7·0	20 31 41	24 36·2
17 Capricorni	5·9	20 39 54	21 54·3
Lacaille 8612...	7·0	20 46 42	24 11·2
„ 8813...	6·0	21 19 36	24 17·2
„ 8832...	7·8	21 24 12	25 40·0
„ 8851...	6·0	21 29 5	23 56·2
O. Arg. S. 21562	7·8	21 35 24	22 25·3

From August 11 to September 23.

O. Arg. S. 20429	7·0	20 15 6	−23 49·1
Lacaille 8463	6·2	20 23 11	22 45·1
„ 8506	7·0	20 31 41	24 36·2
17 Capricorni	5·9	20 39 54	21 54·3
Lacaille 8734	7·0	21 7 1	25 17·2
Lalande 41404	7·5	21 14 32	22 50·7
ζ Capricorni	4·0	21 20 30	22 52·8
37 Capricorni	6·2	21 28 47	20 34·0

List of the Proper Motions in the Line of Sight of Fifty-one Stars.

By H. C. Vogel, Foreign Associate.

In continuation of my communication of 1891 December, on the spectrographic method (vol. lii. No. 2) I hereby transmit the definitive results of that investigation, the observations having been meanwhile brought to a close.

The complete discussion of these researches will be given in the *Publicationen des Astrophysikalischen Observatoriums*, Bd. VII. (Engelmann: Leipzig), which will probably appear during this month (June).

No.	Star.	Epoch.	No. of Plates.	Velocity relative to Sun. (English Miles) Vogel.	Scheiner.	Mean.
1	α Andromedæ	1889·93	2	+ 1·2	+ 4·4	+ 2·8
2	β Cassiopeiæ	1889·04	2	+ 0·8	+ 5·6	+ 3·2
3	α Cassiopeiæ	1890·14	2	− 9·3	− 9·7	− 9·5
4	γ Cassiopeiæ	1888·89	2	+ 2·5	− 6·9	− 2·2
5	β Andromedæ	1889·26	2	+ 5·6	+ 8·3	+ 7·0
6	α Ursæ minoris	1888·90	2	−15·8	−16·3	−16·1

No.	Star.	Epoch.	No. of Plates.	Velocity relative to Sun. (English Miles) Vogel.	Scheiner.	Mean.
7	γ Andromedæ	1889·34	2	− 4·9	−11·1	− 8·0
8	α Arietis	1889·69	3	− 9·0	− 9·3	− 9·2
9	β Persei †	1889·94	12	...	...	− 1·0
10	α Persei	1888·93	2	− 6·7	− 6·1	− 6·4
11	α Tauri	1889·16	4	+29·6	+30·7	+30·2
12	α Aurigæ	1888·98	11	+15·4	+15·0	+15·2
13	β Orionis	1889·24	14	+10·9	+ 9·5	+10·2
14	γ Orionis	1890·37	3	+ 8·0	+ 3·4	+ 5·7
15	β Tauri	1889·65	3	+ 5·6	+ 4·4	+ 5·0
16	δ Orionis	1890·07	4	− 0·1	+ 1·3	+ 0·6
17	ε Orionis	1889·00	3	+17·3	+15·6	+16·5
18	ζ Orionis	1889·00	2	+10·7	+ 7·8	+ 9·3
19	α Orionis	1889·32	2	+ 9·7	+11·7	+10·7
20	β Aurigæ †	1890·50	6	−16·0	−18·9	−17·5
21	γ Geminorum	1889·83	4	− 9·7	−10·8	−10·3
22	α Canis majoris	1890·09	10	− 8·4 ‡	−12·5	− 9·8
23	α Geminorum *	1889·16	3	−18·4 :	−18·4 :	−18·4 :
24	α Canis minoris	1889·68	3	− 4·9	− 6·5	− 5·7
25	β Geminorum	1889·06	2	+ 1·2	+ 0·2	+ 0·7
26	α Leonis	1889·22	2	− 5·3	− 6·1	− 5·7
27	γ Leonis	1889·76	2	−22·7	−25·2	−24·0
28	β Ursæ majoris	1889·39	2	−18·8	−17·6	−18·2
29	α Ursæ majoris	1889·11	4	− 6·4	− 7·9	− 7·2
30	δ Leonis	1889·94	3	− 9·3	− 8·6	− 8·9
31	β Leonis	1889·59	3	− 8·6	− 6·5	− 7·6
32	γ Ursæ majoris	1889·40	2	−18·6	−14·4	−16·5
33	ε Ursæ majoris	1889·39	2	−21·3	−16·2	−18·8
34	α Virginis †	1890·34	27	...	...	− 9·2
35	ζ Ursæ majoris * †	1890·33	8	−20·2	−18·5	−19·4
36	η Ursæ majoris	1889·83	2	−17·8	−14·8	−16·3
37	α Bootis	1889·57	6	− 4·4	− 5·2	− 4·8
38	ε Bootis	1889·36	2	−10·4	− 9·7	−10·1
39	β Ursæ minoris	1889·24	4	+ 8·9	+ 8·8	+ 8·9
40	β Libræ	1889·34	1	− 6·0 :		− 6·0 :
41	α Coronæ Borealis	1890·91	5	+19·7	+20·0	+19·9
42	α Serpentis	1889·36	1	+14·:		+14·:

* Brightest component. † Motion of the system. ‡ Weight 2.

No.	Star.	Epoch.	No. of Plates.	Velocity relative to Sun. (English Miles) Vogel.	Scheiner.	Mean.
43	β Herculis	1889·46	2	−21·3	−22·6	−22·0
44	α Ophiuchi	1889·09	2	+12·9	+10·9	+11·9
45	α Lyræ	1889·64	8	− 8·7	−10·2	− 9·5
46	α Aquilæ	1888·81	3	−24·7	−21·1	−22·9
47	γ Cygni	1888·93	2	− 3·6	− 4·3	− 4·0
48	α Cygni	1888·99	4	− 3·7	− 6·2	− 5·0
49	ε Pegasi	1888·81	2	+ 4·6	+ 5·4	+ 5·0
50	β Pegasi	1889·90	1	+ 4·1 :		+ 4·1 :
51	α Pegasi	1888·81	2	+ 1·1	+ 0·4	+ 0·8

Greatest observed velocity ... +30·2 miles (α Tauri); −24·0 miles (γ Leonis)

Average velocity ... ... 10·4 miles.

No. of stars with positive velocity greater than 10·4 miles 7

No. of stars with negative velocity greater than 10·4 miles 11

Average probable error of the measurements for a single plate and one observer ... ... ± 1·6 mile

: denotes less certain, and :: uncertain.

Potsdam, Royal Observatory:
1892 *June.*

Photographs of the Region of the Globular Cluster 15 *M Pegasi.*

By Isaac Roberts, F.R.S.

Three photographs of the region of 15 M *Pegasi*, R.A. $21^h\ 25^m$, declination 11° 41′ N., have been taken with the 20-inch reflector, the first on 1890 November 4, with an exposure of two hours, the second on 1891 October 4, with an exposure of thirty minutes, and the third on 1891 November 27, with an exposure of sixty minutes.

The enlarged photographs now presented have been made from the first of the negatives with the exposure of two hours, and the scales of the enlargements are one millimetre to four seconds of arc in one, and one millimetre to twenty-four seconds in the other.

Sir John Herschel in his observations of nebulæ and clusters of stars, No. 2120, writes of M 15 as "a magnificent globular cluster; comes up to a perfect blaze in the centre, like a protuberance or nipple, not the condensation of a homogeneous globe; it has straggling streams of stars, as it were, drawing to